

Abstract

ABSTRACT OF THE DISCLOSURE

A handover method for a wireless mobile network including interconnected mobile nodes having time varying connectivity includes determining Quality of Service (QoS) resources of each potential routing path between a mobile node and a correspondent node. The method also includes pre-allocating the QoS resources along at least one potential routing path in advance before initiating a handover of a data flow to be transmitted from the mobile node to the correspondent node via a selected routing path. In addition, the method includes redirecting the data flow to a routing path with best available QoS capabilities as the selected routing path and, in case of sufficient QoS capabilities, reserving the determined QoS resources for the data flow to be transmitted via the selected routing path.

~~The invention targets at a QoS-aware handover procedure in a typical dynamic mobile ad-hoc scenario (cf. Figs. 23 to 27) wherein the connectivity of fixed (AR1, AR2, CN) and/or mobile nodes (MN, M1, M2, M3, M4, EN1, EN2) is unpredictably time-varying and, due to the mobility of mobile nodes, handovers will inevitably frequently occur. Thereby, resources are pre-allocated along potential routing paths in advance, and the flow traffic is redirected to the path having the best available QoS capabilities. According to the new QoS situation of the selected path, adaptive real-time applications can have the opportunity to individually adjust traffic generation. With this concept, packet loss can be avoided and degradation effects on the running real-time application during the QoS-aware handover can be minimized. The QoS-aware handover procedure comprises the steps of handover candidates selection, handover initiation, QoS metrics probing and resource pre-allocation (soft~~

~~reservation), QoS metrics collection, handover decision, handover confirmation (hard reservation), and reservation release.~~

~~In particular, the proposed solution thereby pertains to a method for proactively probing the QoS situation of each potential routing path, pre-allocating resources along the best available QoS path before the handover of the QoS data flow to be transmitted to a new access point (AP) is initiated, providing efficient resource reservation management and maintenance within the underlying mobile ad-hoc networks and incorporating advanced QoS support features offered by adaptive real-time applications. The invention further proposes an „information dissemination“ approach, which optimizes prior-art address resolution mechanisms.~~

~~(Figs. 20 and 28)~~